

REMARKS

Claims 1, 4, 7, 12-16 and 19-22 are pending in this application. Claims 1, 16, 19, 21 and 22, the independent claims, have been amended to define still more clearly what Applicants regard as their invention. Favorable reconsideration is respectfully requested.

In the outstanding Office Action, Claims 1, 3, 4, 7, 12-16 and 19-22 were rejected under 35 U.S.C. § 112, first paragraph, as not being supported by sufficient written description in the application as filed. The Office Action states at page 3 that the recitations of “wherein the first conversion line converts a substantially minimum input value of a saturation of the image to a substantially minimum output value” and “wherein the second conversion line converts a substantially maximum input value of the saturation of the image to a substantially maximum output value” are not supported in the original disclosure. In particular, the Office Action states at page 2 that the recitations in the claims of a “substantially minimum input value” and a “substantially maximum output value” have no clear definition of the value/range/boundary.

While Applicants do not concede the propriety of the rejection, in an effort to facilitate issuance of the application, the independent claims have been amended to delete the word “substantially” from those recitations. In a telephone conference with the undersigned attorney on April 19, 2006, the Examiner agreed that these changes would overcome the Section 112, first paragraph, rejection in this regard.

The Office Action also states at page 3, in rejecting the claims under Section 112, first paragraph, that the recitation of “wherein the second conversion line is set independently of the first conversion line” is not supported by the original disclosure. Specifically, the Office

Action states at pages 2 and 3:

Second, the Applicant again uses FIG. 12 to show the support of the limitation “wherein the second conversion line is set independently from the first conversion line”. The Applicant continues to explain that there are two different conversion lines on the same plotted line of the graph. Again, one skilled in the art does not understand of the possibility of two separate/independent lines in the same plotted curve. Mathematically, points/values on plotted lines are dependent or correlated or relate to each other in order to generate a line. Thus, the Miyashita Reference discloses this limitation since the reference teaches a single saturation curve, by the definition of FIG. 12, which can have two conversion lines by reasonable interpretation. Thus, the rejections of all of the claims are maintained.

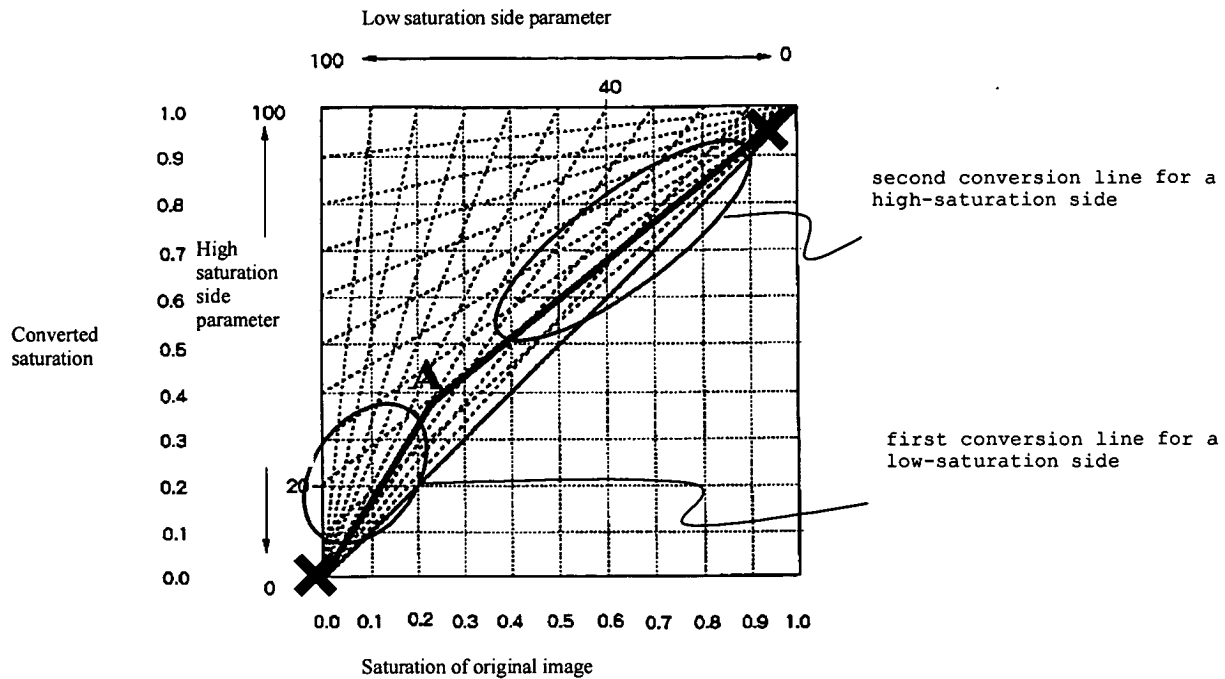
Applicants strongly disagree with the Examiner’s assertions above, and have, in prior papers, pointed out to the Examiner that the specification specifically teaches otherwise. In essence, it is the Examiner’s position (as also conveyed to the undersigned attorney during the April 19, 2006, interview) that Fig. 12 (reproduced below) shows just one conversion line, and that line cannot be made up of two separate and independent lines. However, the corresponding description in the specification (see, e.g., page 19, line 19, to page 20, line 23) teaches that (for example) a first conversion line for a low saturation side is illustrated in Fig. 12 by a line from point (0.0, 0.0) to point (0.6, 1.0), and a second conversion line for a high saturation side is illustrated by a line from point (1.0, 1.0) to point (0.0, 0.2), and that the bold line in the figure is a final conversion line which is set based on the intersection of the two lines at point A in the figure.¹ In this way, the final conversion line shown in Fig. 12 is actually two conversion lines which may be set independently, as described in the specification.

¹ It is of course to be understood that the references to various portions of the present application are by way of illustration and example only, and that the claims are not limited by the details shown in the portions referred to.

During the April 19, 2006, interview, the undersigned attorney suggested amending the claims in order to further clarify that the saturation conversion characteristics are set based on the intersection of the two independent conversion lines. In this regard, Claim 1 now recites that the second conversion line intersects the first conversion line and is set independently of the first conversion line, and that saturation conversion characteristics are generated on the basis of (1) the first conversion line, for the low-saturation side, from the minimum output value to the intersection of the first and second conversion lines, and (2) the second conversion line, for the high-saturation side, from the intersection of the first and second conversion lines to the maximum output value. These recitations are supported by the originally filed application at, for example, pages 18 et seq. and Fig. 12. Further, the Examiner's attention is specifically directed to page 20, lines 5-12 of the specification, which states:

In Fig. 12, these two lines cross at point A. Hence, in step S104, a line that connects the origin (0.0, 0.0), point A, and the upper right point (1.0, 1.0) of the graph is calculated as the saturation conversion characteristics, and the saturation (S) component of the HLS data converted in Step S101 undergoes saturation conversion based on the calculated characteristics.

In this way, it is clear that the final conversion line (the bold line in Fig. 12) represents the generated saturation conversion characteristics, and is based on the intersecting first and second conversion lines, as described. Accordingly, it is submitted that the two conversion lines are set independently of each other.



For at least the foregoing reasons, it is submitted that the above-mentioned features of Claim 1 are supported at least by Fig. 12 and the description thereof at pages 18 et seq. Independent Claims 16, 19, 21, and 22 each recite features similar to those discussed above with respect to Claim 1 and therefore are also believed to be supported by the application as originally filed for at least the reasons discussed above.

Withdrawal of the rejection under Section 112, first paragraph, is respectfully requested.

Claims 1, 4, 7, 12-16, and 19-22 also were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,031,543 (Miyashita et al.). Applicants strongly believe, however, that each of the independent claims is clearly allowable over that patent, for at least the following reasons.

Claim 1 is directed to an image processing apparatus in which a saturation

calculation unit is arranged to calculate saturation information of an image. A first setting unit is arranged to set a first conversion line for a low-saturation side, wherein the first conversion line converts a minimum input value of a saturation of the image to a minimum output value. A second setting unit is arranged to set a second conversion line for a high-saturation side, wherein the second conversion line converts a maximum input value of the saturation of the image to a maximum output value. According to Claim 1, it should be noted that the second conversion line intersects the first conversion line and is set independently of the first conversion line. Moreover, a saturation conversion characteristic generating unit is arranged to generate saturation conversion characteristics on the basis of (1) the first conversion line, for the low-saturation side, from the minimum output value to the intersection of the first and second conversion lines, and (2) the second conversion line, for the high-saturation side, from the intersection of the first and second conversion lines to the maximum output value. A saturation conversion unit converts the saturation of the image on the basis of the saturation conversion characteristics generated by the saturation conversion characteristic generating unit.

The general nature of Miyashita et al. has been discussed adequately in previous papers, and it is not believed to be necessary to repeat that discussion.

As noted above, the Examiner states the following at pages 2 and 3 of the Office

Action:

The Applicant continues to explain that there are two different conversion lines on the same plotted line of the graph. Again, one skilled in the art does not understand of the possibility of two separate/independent lines in the same plotted curve. Mathematically, points/values

on plotted lines are dependent or correlated or relate to each other in order to generate a line. Thus, the Miyashita Reference discloses this limitation since the reference teaches a single saturation curve, by the definition of FIG. 12, which can have two conversion lines by reasonable interpretation. Thus, the rejections of all of the claims are maintained.

Applicants consider that the explanation of Applicants in connection with the Section 112, first paragraph, rejection, clearly explains how, in Claim 1, there are two conversion lines, and the second conversion line intersects the first conversion line and is set independently of the first conversion line, and saturation conversion characteristics are generated on the basis of (1) the first conversion line, for the low-saturation side, from the minimum output value to the intersection of the first and second conversion lines, and (2) the second conversion line, for the high-saturation side, from the intersection of the first and second conversion lines to the maximum output value.

These features of Claim 1 are simply not found in Miyashita et al., and indeed, the Examiner concedes that Miyashita teaches a single saturation curve. The Examiner goes on to state that Miyashita et al. “can have two conversion lines by reasonable interpretation.” It is respectfully submitted, however, that such an interpretation of Miyashita et al. would not be reasonable. As Applicants have noted in prior papers in connection with Figs. 16, 27C, 29, and 31, cited by the Examiner:

(1) In Fig. 16 of Miyashita et al., the user can correct saturation by changing the size of the reference circle 106. However, the conversion curves of “a” and “b” (104 and 105, respectively) correspond to only a single parameter, i.e. the change in size of the reference circle,

and both the low-saturation side and the high-saturation side are converted using only that single parameter.

(2) In Fig. 29 of Miyashita et al., when an operating lever 117 is shifted in the positive direction, the half tone curve swells upward to form a curve of the middle up type shown in Fig. 27C. However, the half tone curve corresponds to only a single parameter controlled by operating lever 117, and both the low-saturation side and the high-saturation side are converted using only that single parameter.

(3) In Fig. 31 of Miyashita et al., the lower and upper limits of a range over which a selected curve is applied can be changed based on changing the positions of the levers. However, while the range width of conversion of a selected curve may be set, Miyashita et al. does not independently set a first conversion line for a low-saturation side and a second conversion line for a high-saturation side.

As can be seen, Miyashita et al. uses only a single parameter in its various conversions, and therefore Applicants submit that it would not be proper to conclude that Miyashita et al. teaches or suggests “two conversion lines,” as stated by the Examiner. Since Miyashita et al. does not independently set a first conversion line for a low-saturation side and a second conversion line for a high-saturation side, the Miyashita et al. method is not able to separately manipulate conversion characteristics at a low-saturation side and a high-saturation side. Nevertheless, as noted, Applicants have amended Claim 1 to define still more clearly what is regarded as the invention and, in particular, nothing in Miyashita et al. would teach or suggest that two conversion lines are set, in which the second conversion line intersects the first

conversion line and is set independently of the first conversion line, and saturation conversion characteristics are generated on the basis of (1) the first conversion line, for the low-saturation side, from a minimum output value to the intersection of the first and second conversion lines, and (2) the second conversion line, for the high-saturation side, from the intersection of the first and second conversion lines to the maximum output value, as recited in Claim 1.

Accordingly, for at least these reasons, it is believed plain that Claim 1 is allowable over Miyashita et al.

Each of the other independent claims recites features similar to those discussed above with regard to Claim 1, and each is deemed allowable over Miyashita at least by virtue of the arguments advanced above with regard to that claim.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as a reference against the independent claims herein. Those claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

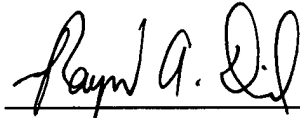
This Amendment After Final Action is believed clearly to place this application in condition for allowance and, therefore, its entry is believed proper under 37 C.F.R. § 1.116.

Accordingly, entry of this Amendment After Final Action, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Raymond A. DiPerna", written over a horizontal line.

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